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FIG. 1

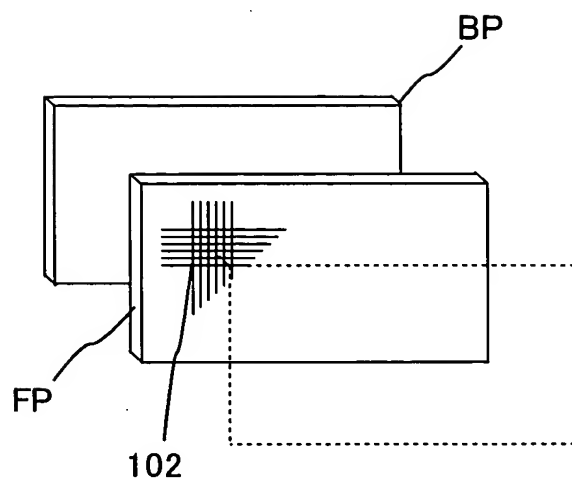
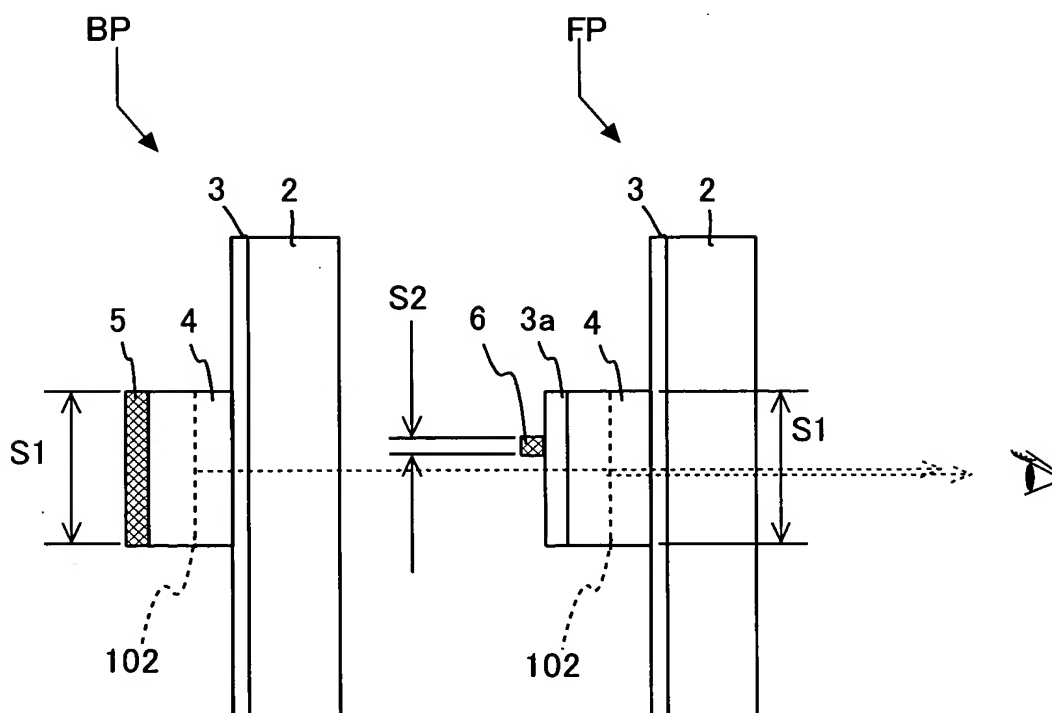


FIG. 2



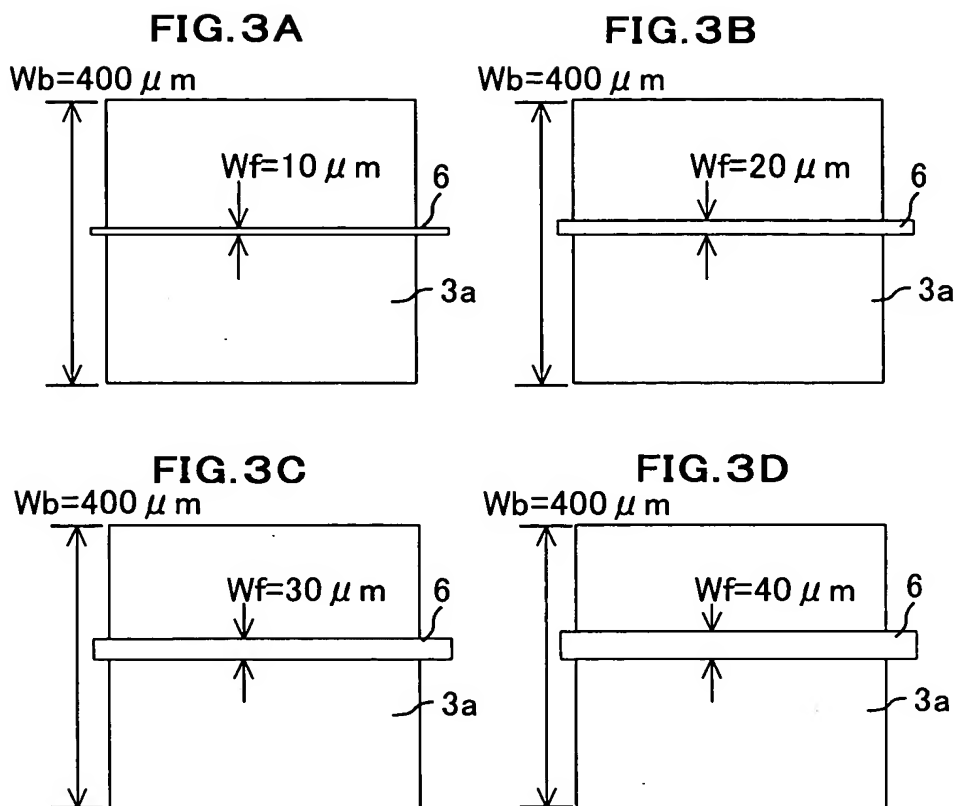
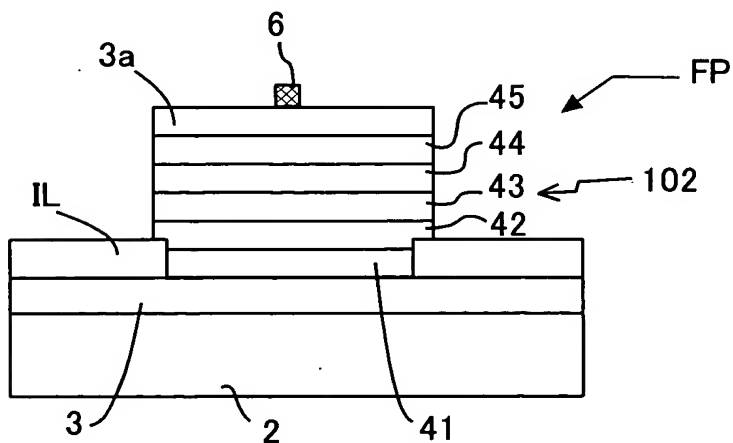


FIG. 4



A cross-sectional view of a semiconductor device 102. The device consists of a substrate 2 with a base layer 3 and a top layer 41. A central region 42 is defined by a layer 43 and a layer 44. A layer 3a is located on top of the central region 42. A small square feature 6 is positioned on top of layer 3a. An arrow labeled FP points to the right side of the device. An arrow labeled IL points to the left side of the device. An arrow labeled 102 points to the central region 42.

FIG. 1 is a cross-sectional view of a semiconductor device. The device consists of a substrate 2 with a lower layer 3 and an upper layer 42. A gate stack 102 is formed on the substrate, comprising a gate insulating layer 43 and a gate electrode layer 44. A source/drain region 3a is formed in the substrate 2, and a contact plug 6 is formed in the source/drain region 3a. A first interlayer film 100 is formed on the gate stack 102 and the source/drain region 3a. A second interlayer film 101 is formed on the first interlayer film 100. A third interlayer film 102 is formed on the second interlayer film 101. A fourth interlayer film 103 is formed on the third interlayer film 102. A fifth interlayer film 104 is formed on the fourth interlayer film 103. A sixth interlayer film 105 is formed on the fifth interlayer film 104. A seventh interlayer film 106 is formed on the sixth interlayer film 105. An eighth interlayer film 107 is formed on the seventh interlayer film 106. A ninth interlayer film 108 is formed on the eighth interlayer film 107. A tenth interlayer film 109 is formed on the ninth interlayer film 108. An eleventh interlayer film 110 is formed on the tenth interlayer film 109. A twelfth interlayer film 111 is formed on the eleventh interlayer film 110. A thirteenth interlayer film 112 is formed on the twelfth interlayer film 111. A fourteenth interlayer film 113 is formed on the thirteenth interlayer film 112. A fifteenth interlayer film 114 is formed on the fourteenth interlayer film 113. A sixteenth interlayer film 115 is formed on the fifteenth interlayer film 114. A seventeenth interlayer film 116 is formed on the sixteenth interlayer film 115. An eighteenth interlayer film 117 is formed on the seventeenth interlayer film 116. A nineteenth interlayer film 118 is formed on the eighteenth interlayer film 117. A twentieth interlayer film 119 is formed on the nineteenth interlayer film 118. A twenty-first interlayer film 120 is formed on the twentieth interlayer film 119. A twenty-second interlayer film 121 is formed on the twenty-first interlayer film 120. A twenty-third interlayer film 122 is formed on the twenty-second interlayer film 121. A twenty-fourth interlayer film 123 is formed on the twenty-third interlayer film 122. A twenty-fifth interlayer film 124 is formed on the twenty-fourth interlayer film 123. A twenty-sixth interlayer film 125 is formed on the twenty-fifth interlayer film 124. A twenty-seventh interlayer film 126 is formed on the twenty-sixth interlayer film 125. A twenty-eighth interlayer film 127 is formed on the twenty-seventh interlayer film 126. A twenty-ninth interlayer film 128 is formed on the twenty-eighth interlayer film 127. A thirtieth interlayer film 129 is formed on the twenty-ninth interlayer film 128. A thirty-first interlayer film 130 is formed on the thirtieth interlayer film 129. A thirty-second interlayer film 131 is formed on the thirty-first interlayer film 130. A thirty-third interlayer film 132 is formed on the thirty-second interlayer film 131. A thirty-fourth interlayer film 133 is formed on the thirty-third interlayer film 132. A thirty-fifth interlayer film 134 is formed on the thirty-fourth interlayer film 133. A thirty-sixth interlayer film 135 is formed on the thirty-fifth interlayer film 134. A thirty-seventh interlayer film 136 is formed on the thirty-sixth interlayer film 135. A thirty-eighth interlayer film 137 is formed on the thirty-seventh interlayer film 136. A thirty-ninth interlayer film 138 is formed on the thirty-eighth interlayer film 137. A fortieth interlayer film 139 is formed on the thirty-ninth interlayer film 138. A forty-first interlayer film 140 is formed on the fortieth interlayer film 139. A forty-second interlayer film 141 is formed on the forty-first interlayer film 140. A forty-third interlayer film 142 is formed on the forty-second interlayer film 141. A forty-fourth interlayer film 143 is formed on the forty-third interlayer film 142. A forty-fifth interlayer film 144 is formed on the forty-fourth interlayer film 143. A forty-sixth interlayer film 145 is formed on the forty-fifth interlayer film 144. A forty-seventh interlayer film 146 is formed on the forty-sixth interlayer film 145. A forty-eighth interlayer film 147 is formed on the forty-seventh interlayer film 146. A forty-ninth interlayer film 148 is formed on the forty-eighth interlayer film 147. A fiftieth interlayer film 149 is formed on the forty-ninth interlayer film 148. A fifty-first interlayer film 150 is formed on the fiftieth interlayer film 149. A fifty-second interlayer film 151 is formed on the fifty-first interlayer film 150. A fifty-third interlayer film 152 is formed on the fifty-second interlayer film 151. A fifty-fourth interlayer film 153 is formed on the fifty-third interlayer film 152. A fifty-fifth interlayer film 154 is formed on the fifty-fourth interlayer film 153. A fifty-sixth interlayer film 155 is formed on the fifty-fifth interlayer film 154. A fifty-seventh interlayer film 156 is formed on the fifty-sixth interlayer film 155. A fifty-eighth interlayer film 157 is formed on the fifty-seventh interlayer film 156. A fifty-ninth interlayer film 158 is formed on the fifty-eighth interlayer film 157. A sixtieth interlayer film 159 is formed on the fifty-ninth interlayer film 158. A sixty-first interlayer film 160 is formed on the sixtyth interlayer film 159. A sixty-second interlayer film 161 is formed on the sixty-first interlayer film 160. A sixty-third interlayer film 162 is formed on the sixty-second interlayer film 161. A sixty-fourth interlayer film 163 is formed on the sixty-third interlayer film 162. A sixty-fifth interlayer film 164 is formed on the sixty-fourth interlayer film 163. A sixty-sixth interlayer film 165 is formed on the sixty-fifth interlayer film 164. A sixty-seventh interlayer film 166 is formed on the sixty-sixth interlayer film 165. A sixty-eighth interlayer film 167 is formed on the sixty-seventh interlayer film 166. A sixty-ninth interlayer film 168 is formed on the sixty-eighth interlayer film 167. A seventieth interlayer film 169 is formed on the sixty-ninth interlayer film 168. A seventy-first interlayer film 170 is formed on the seventieth interlayer film 169. A seventy-second interlayer film 171 is formed on the seventy-first interlayer film 170. A seventy-third interlayer film 172 is formed on the seventy-second interlayer film 171. A seventy-fourth interlayer film 173 is formed on the seventy-third interlayer film 172. A seventy-fifth interlayer film 174 is formed on the seventy-fourth interlayer film 173. A seventy-sixth interlayer film 175 is formed on the seventy-fifth interlayer film 174. A seventy-seventh interlayer film 176 is formed on the seventy-sixth interlayer film 175. A seventy-eighth interlayer film 177 is formed on the seventy-seventh interlayer film 176. A seventy-ninth interlayer film 178 is formed on the seventy-eighth interlayer film 177. An eightieth interlayer film 179 is formed on the seventy-ninth interlayer film 178. An eighty-first interlayer film 180 is formed on the eightyth interlayer film 179. An eighty-second interlayer film 181 is formed on the eighty-first interlayer film 180. An eighty-third interlayer film 182 is formed on the eighty-second interlayer film 181. An eighty-fourth interlayer film 183 is formed on the eighty-third interlayer film 182. An eighty-fifth interlayer film 184 is formed on the eighty-fourth interlayer film 183. An eighty-sixth interlayer film 185 is formed on the eighty-fifth interlayer film 184. An eighty-seventh interlayer film 186 is formed on the eighty-sixth interlayer film 185. An eighty-eighth interlayer film 187 is formed on the eighty-seventh interlayer film 186. An eighty-ninth interlayer film 188 is formed on the eighty-eighth interlayer film 187. A ninetieth interlayer film 189 is formed on the eighty-ninth interlayer film 188. A hundredth interlayer film 190 is formed on the ninetieth interlayer film 189. A hundred-first interlayer film 191 is formed on the hundredth interlayer film 190. A hundred-second interlayer film 192 is formed on the hundred-first interlayer film 191. A hundred-third interlayer film 193 is formed on the hundred-second interlayer film 192. A hundred-fourth interlayer film 194 is formed on the hundred-third interlayer film 193. A hundred-fifth interlayer film 195 is formed on the hundred-fourth interlayer film 194. A hundred-sixth interlayer film 196 is formed on the hundred-fifth interlayer film 195. A hundred-seventh interlayer film 197 is formed on the hundred-sixth interlayer film 196. A hundred-eighth interlayer film 198 is formed on the hundred-seventh interlayer film 197. A hundred-ninth interlayer film 199 is formed on the hundred-eighth interlayer film 198. A hundred-tenth interlayer film 200 is formed on the hundred-ninth interlayer film 199. A hundred-eleventh interlayer film 201 is formed on the hundred-tenth interlayer film 200. A hundred-twelfth interlayer film 202 is formed on the hundred-eleventh interlayer film 201. A hundred-thirteenth interlayer film 203 is formed on the hundred-twelfth interlayer film 202. A hundred-fourteenth interlayer film 204 is formed on the hundred-thirteenth interlayer film 203. A hundred-fifteenth interlayer film 205 is formed on the hundred-fourteenth interlayer film 204. A hundred-sixteenth interlayer film 206 is formed on the hundred-fifteenth interlayer film 205. A hundred-seventeenth interlayer film 207 is formed on the hundred-sixteenth interlayer film 206. A hundred-eighteenth interlayer film 208 is formed on the hundred-seventeenth interlayer film 207. A hundred-nineteenth interlayer film 209 is formed on the hundred-eighteenth interlayer film 208. A hundred-twentieth interlayer film 210 is formed on the hundred-nineteenth interlayer film 209. A hundred-twenty-first interlayer film 211 is formed on the hundred-twentieth interlayer film 210. A hundred-twenty-second interlayer film 212 is formed on the hundred-twenty-first interlayer film 211. A hundred-twenty-third interlayer film 213 is formed on the hundred-twenty-second interlayer film 212. A hundred-twenty-fourth interlayer film 214 is formed on the hundred-twenty-third interlayer film 213. A hundred-twenty-fifth interlayer film 215 is formed on the hundred-twenty-fourth interlayer film 214. A hundred-twenty-sixth interlayer film 216 is formed on the hundred-twenty-fifth interlayer film 215. A hundred-twenty-seventh interlayer film 217 is formed on the hundred-twenty-sixth interlayer film 216. A hundred-twenty-eighth interlayer film 218 is formed on the hundred-twenty-seventh interlayer film 217. A hundred-twenty-ninth interlayer film 219 is formed on the hundred-twenty-eighth interlayer film 218. A hundred-thirtieth interlayer film 220 is formed on the hundred-twenty-ninth interlayer film 219. A hundred-thirty-first interlayer film 221 is formed on the hundred-thirtieth interlayer film 220. A hundred-thirty-second interlayer film 222 is formed on the hundred-thirty-first interlayer film 221. A hundred-thirty-third interlayer film 223 is formed on the hundred-thirty-second interlayer film 222. A hundred-thirty-fourth interlayer film 224 is formed on the hundred-thirty-third interlayer film 223. A hundred-thirty-fifth interlayer film 225 is formed on the hundred-thirty-fourth interlayer film 224. A hundred-thirty-sixth interlayer film 226 is formed on the hundred-thirty-fifth interlayer film 225. A hundred-thirty-seventh interlayer film 227 is formed on the hundred-thirty-sixth interlayer film 226. A hundred-thirty-eighth interlayer film 228 is formed on the hundred-thirty-seventh interlayer film 227. A hundred-thirty-ninth interlayer film 229 is formed on the hundred-thirty-eighth interlayer film 228. A hundred-fortieth interlayer film 230 is formed on the hundred-thirty-ninth interlayer film 229. A hundred-forty-first interlayer film 231 is formed on the hundred-fortieth interlayer film 230. A hundred-forty-second interlayer film 232 is formed on the hundred-forty-first interlayer film 231. A hundred-forty-third interlayer film 233 is formed on the hundred-forty-second interlayer film 232. A hundred-forty-fourth interlayer film 234 is formed on the hundred-forty-third interlayer film 233. A hundred-forty-fifth interlayer film 235 is formed on the hundred-forty-fourth interlayer film 234. A hundred-forty-sixth interlayer film 236 is formed on the hundred-forty-fifth interlayer film 235. A hundred-forty-seventh interlayer film 237 is formed on the hundred-forty-sixth interlayer film 236. A hundred-forty-eighth interlayer film 238 is formed on the hundred-forty-seventh interlayer film 237. A hundred-forty-ninth interlayer film 239 is formed on the hundred-forty-eighth interlayer film 238. A hundred-fiftieth interlayer film 240 is formed on the hundred-forty-ninth interlayer film 239. A hundred-fifty-first interlayer film 241 is formed on the hundred-fiftieth interlayer film 240. A hundred-fifty-second interlayer film 242 is formed on the hundred-fifty-first interlayer film 241. A hundred-fifty-third interlayer film 243 is formed on the hundred-fifty-second interlayer film 242. A hundred-fifty-fourth interlayer film 244 is formed on the hundred-fifty-third interlayer film 243. A hundred-fifty-fifth interlayer film 245 is formed on the hundred-fifty-fourth interlayer film 244. A hundred-fifty-sixth interlayer film 246 is formed on the hundred-fifty-fifth interlayer film 245. A hundred-fifty-seventh interlayer film 247 is formed on the hundred-fifty-sixth interlayer film 246. A hundred-fifty-eighth interlayer film 248 is formed on the hundred-fifty-seventh interlayer film 247. A hundred-fifty-ninth interlayer film 249 is formed on the hundred-fifty-eighth interlayer film 248. A hundred-sixtieth interlayer film 250 is formed on the hundred-fifty-ninth interlayer film 249. A

FIG. 8

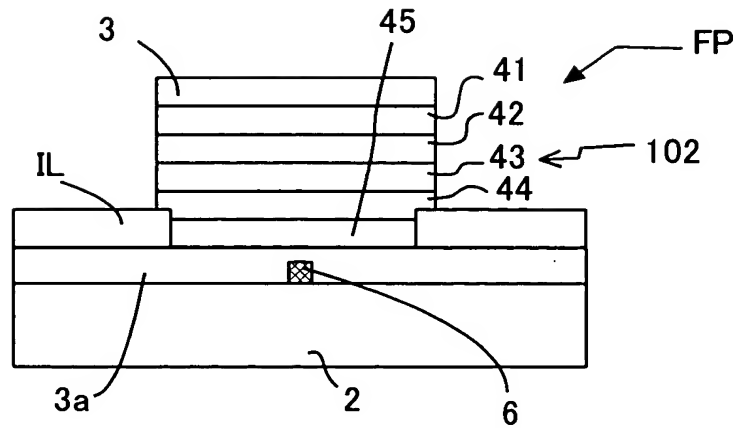


FIG. 9

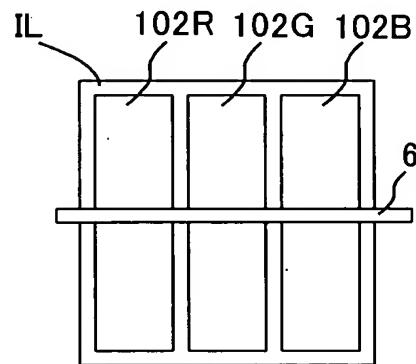
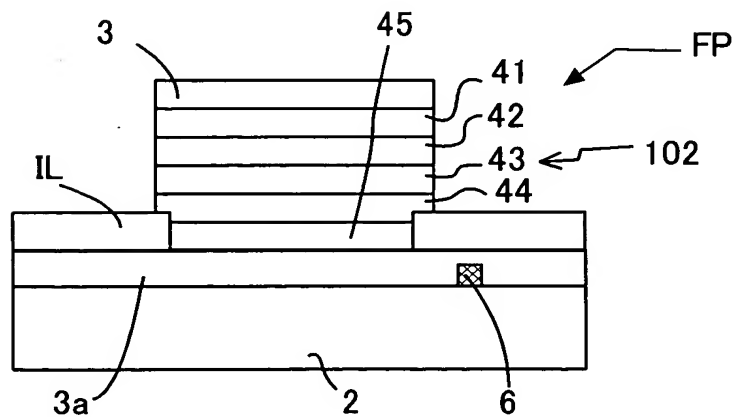


FIG. 10



5/5

FIG. 1 1

